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TRANSPORTATION AND LAND USE SECTOR GHG REDUCTION POLICY OPTIONS

CCAG MEETING #2, SEPTEMBER 29, 2005

Indicative Potential Emission Reductions* -

High (H): Potentially capable of saving at least 1 Million Metric Tons CO₂e per year by 2020 (~1% of current AZ emissions)

Medium (M): Potentially capable of saving from 0.1 to 1 Million Metric Tons per year by 2020

Low (L): Unlikely to yield more than 0.1 Million Metric Tons CO₂e per year by 2020

Uncertain (U): Too many unknowns to estimate at this time

* Several measures may overlap in terms of the emissions reductions. Estimates assume measures would be implemented independently from other measures.

Indicative cost (\$/tCO₂e)

High (H): \$50/tCO₂e or above

Medium (M): \$5-50/tCO₂e

Low (L): \$5/tCO₂e or lower

Negative (Neg): Cost Savings

Indication of Priorities:

- **High:** High priority items are deemed deserving of considerable further analysis.
- **Medium:** Medium priority items will be carried forward, with the extent of further consideration and analysis to be determined later.
- **Low:** Low priority items will be moved to a separate list as options to be potentially considered at a later time.

		Priority: High, Med, Low	Implement . Level	Potential Emission Reductions	Cost (\$/tCO ₂ removed)	Co-benefits, Feasibility Consideration
1.	PASSENGER VEHICLE GHG EMISSION RATES					
1.1	Vehicle Technology					
1.1.1	California GHG Emission Standards for Light-duty Vehicles	H	State	H	L	Opinions vary sharply on cost. Legal challenge pending.
1.1.2	California LEV-2 Emission Standards (option: w/ or w/out Advanced Technology Component)	TBD	State	L	L/M	May be attractive as SIP option due to reduction in conventional air pollution
1.1.3	State R&D on Low-GHG Vehicle Technology (e.g., fuel cell)	L	State	L	?	Best coupled w/ federal dollars
1.1.4	Add-on Technologies (Low Friction Oil, Low-Rolling Resistance Tires)	M	State	L	Neg/L	
1.2	Vehicle Operation					
1.2.1	Lower and/or Enforce Speed Limits	M	State, local	L	?	
1.2.2	Vehicle Maintenance, Driver Training	M	State	L	?	
1.2.3	Transportation System Management	TBD	State	?	?	
1.3	Incentives & Disincentives					
1.3.1	<i>Deleted: Procurement of Efficient Fleet Vehicles [moved to new 3.4]</i>					
1.3.2	Feebates (state-specific or regional) [Charge a fee on purchases of relatively high-emitting vehicles and give a rebate on the purchase of relatively low-emitting vehicles. Overall, fees/rebates are revenue neutral.]	M	State	L/M	?	Considered in many states but not adopted.
1.3.3	GHG-based registration fees	M	State	L	?	
1.3.4	Tax Credits for Fuel Efficient Vehicles	L	State	L	?	Federal tax code provides tax credits for alternative fuel vehicles
1.3.5	Vehicle Scrappage	L	State, local	L	L/M	Pilots undertaken in several cities.

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2.	LAND USE AND LOCATION EFFICIENCY					
2.1	General <i>[Option: Treat these as options as a bundle]</i>					
2.1.1	Infill, Brownfield Re-development	H	State, local	H	?	
2.1.2	Transit-Oriented Development	H	State, local	H	?	
2.1.3	Smart Growth Planning, Modeling, Tools	H	State, local	H	?	
2.1.4	Targeted Open Space Protection	H	State, local	H	?	
3.	INCREASING LOW-GHG TRAVEL OPTIONS					
3.1	Increase Transportation Funding for Efficient Modes					
3.1.1	Make better use of CMAQ funds	H	State, local	L	L	
3.1.2	Expand Transit Infrastructure (rail, bus, BRT), Improve Transit Service, Promotion, and Marketing <i>[subsumes previous 9/21 matrix items 3.1.2, 3.1.3, 3.1.5]</i>	H	State, local	L	M/H	
3.1.3	Bike and Pedestrian Infrastructure	H	State, local	L	?	
3.1.4	HOV lanes	L	State, local	L	?	
3.1.5	"Fix-it-First" <i>[Earmark transportation funds toward the repair of existing transportation network before funding new transportation infrastructure]</i>	L	State, local	L/M	?	

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3.1.6	Transit Prioritization (signal prioritization, HOV lanes)	L	State, local	L	?	
3.1.7	Telecommute and Live-Near-Your-Work	L	State, local	L	?	
3.1.8	Car sharing / car pooling	L	Local	L	?	
3.1.9	E-Commerce	L	State, local	L	?	
3.2	Incentives & Disincentives					
3.2.1	Employer-provided Commuter Incentives (transit passes, , vanpools, preferential parking) <i>[includes "Parking Cash Out" -- an employer that offers free parking also offers the parking subsidy in cash]</i>	L	State, local, private firms	?	?	
3.2.2	VTM Tax <i>[tax on miles driven]</i>	L	State	L/M	?	
3.2.3	Pay As You Drive Insurance <i>[part of a vehicle's insurance premium is determined by annual miles driven]</i>	L	State, insurance companies			Revenue neutral to drivers as a whole
3.2.4	Increased Fuel Tax (w/ targeted use of revenue towards travel alternatives)	L	State	L	?	
3.2.5	Location-Efficient Mortgages <i>[favorable mortgage terms reflecting lower cost-of-living in mixed-use communities near public transportation]</i>	M	State, mortgage providers	L	?	
3.2.6	Congestion Pricing (or tolls) (w/ targeted use of revenue towards travel alternatives)	M	State, local	?	?	
3.2.7	Parking Pricing or Supply Restrictions	L	Local			
3.2.8	Transit Pricing Incentives	L	Local			

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3.2.9	GHG Offset Requirements for Large Developments <i>[Require developer to offset GHG emissions attributable to a development]</i>	L	Local/state			
3.2.10	Benefits for Low GHG Vehicles (e.g., preferential parking, use of HOV lanes)	M	Local, private firms			
3.3	Fuel Measures					
3.3.1	Low-GHG Fuel Standard (e.g., minimum ethanol or biodiesel content)	TBD	State	H	L/M	
3.3.2	<i>Deleted: Low-GHG Fuel for State Fleets (e.g., ethanol, biodiesel, compressed natural gas (CNG), electric). Moved to 3.4.1.</i>	TBD				
3.3.3	Biofuel expansion (biodiesel, CNG, LPG, cellulosic ethanol)	TBD	State, private firms	M	L/M	
3.3.4	Expand Alternative Fuel Infrastructure Development (e.g. hydrogen, CNG)	TBD	State, local	L	n/a	
3.4	Fleet Vehicles					
3.4.1	Low-GHG Fuel for State Fleets (e.g., ethanol, biodiesel, compressed natural gas (CNG), electric)	TBD	State	L	L/M	
3.4.2	Promote Low-GHG Fuel for Private Fleets	TBD	State/local	L	L/M	
4.	FREIGHT					
4.1	Vehicle Technology					
4.1.1	Vehicle Technology Improvements (e.g., engines, aerodynamics)	TBD		L	?	New EPA emission standards for heavy-duty engines take effect in 2007.
4.1.2	Voluntary diesel retrofit program	TBD		L	L/M	See EPA National Clean Diesel Campaign

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4.1.3	Low-sulfur diesel	TBD		L	H	New EPA fuel standards for low-sulfur diesel take effect in 2006.
4.1.4	Black carbon control technologies (e.g., use of particulate traps, other complementary technologies)	TBD	State, local	?	M	Large co-benefits in PM reduction
4.2	Vehicle Operation <i>[Option: Treat these as options as a bundle]</i>					
4.2.1	Freight Logistics Improvements/GIS	TBD				
4.2.2	Enforce Speed Limits	TBD				
4.2.3	Improve Traffic Flow	TBD				
4.2.4	Increased Size & Weight of Trucks	TBD				
4.2.5	Pre-clearance at Scale Houses	TBD				
4.2.6	Promote Truck Stop Electrification <i>[reduces idling]</i>	TBD				
4.2.7	Enforce Anti-Idling	TBD				
4.2.8	Intermodal Freight Initiatives <i>[increase rail use through better intermodal connections]</i>	TBD				See e.g. EPA SmartWay program
4.3	Incentives & Disincentives					
4.3.1	Deleted: Procurement of Fuel Efficient Fleet Vehicles (public, private or other) [combined w/ 3.4.2 above]					
4.3.2	Incentives to Retire or Improve Older Less Efficient Vehicles	TBD				
4.3.3	Maintenance and Driver Training <i>[to improve fuel efficiency]</i>	TBD				

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4.3.4	Increased Truck Tolls or Highway User Fees	TBD				
4.4	Intercity Travel: Aviation, High Speed Rail, Bus					
4.4.1	<i>Deleted: High-speed Rail [combined with 3.1.5]</i>					
4.4.2	Integrated Aviation, Rail, Bus Networks	TBD				
4.4.3	Aircraft emissions <i>[improved operation of aircraft and runway management]</i>	TBD				
4.4.4	Use of Alternate Fuels in Airport Ground Equipment	TBD				
4.5	Off-Road Vehicles (construction equipment, out-board motors, ATVs, etc)					
4.5.1	Incentives for Purchase of Efficient Vehicles/Equipment	TBD				
4.5.2	Improved Operations, Operator Training	TBD				
4.5.3	Maintenance Improvements	TBD				
4.5.4	Increased Use of Alternative Fuels or Low Sulfur Diesel	TBD				